

WHAT IS CLAIMED IS:

1. A method of simulating the movement of cloth, the method comprising a step of using an immediate buckling model, wherein the deformation unit which represents the part of the cloth of interest is bent immediately without contraction when compressive force is applied to two extremities of said deformation unit.
2. A method of simulating the movement of cloth, the method comprising a step of estimating the shape of said deformation unit upon application of compressive force as a function of the distance between two extremities of said deformation unit.
3. A method of simulating the movement of cloth, the method comprising a step of calculating the bending deformation energy stored in said deformation unit by estimating the shape of the deformation unit according to the method defined in claim 2.
- 15 4. Means for modeling hysteresis characteristics between bending moment and curvature of cloth, wherein the means uses n slip units and n+1 springs, wherein each slip unit makes a serial connection with a spring unit resulting in n pairs of spring-slip units, and said n pairs of spring-slip units and the remaining spring are connected in parallel.
- 20 5. The means as defined in claim 4, wherein, by taking said number n to infinity, the means approximates the moment-curvature relationship with piece-wise second degree polynomial functions.,
6. The method as defined in claim 2, wherein the estimating step further comprises the steps of: estimating the curvature of said deformation unit as a function of distance between two extremities of said deformation unit; and estimating the shape of the bending deformation from the estimated curvature.

7... The method as defined in claim 3, the method further comprising the steps of: differentiating the bending deformation energy to obtain the force vector at the two extremities of the deformation unit; and obtaining the Jacobian matrix of the force vector, wherein the Jacobian matrix is an element for simulating the
5 bending deformation of cloth.

8. The method as defined in claim 7, wherein terms having negative eigenvalues are dropped from the Jacobian matrix.

9. The method of simulating the movement of cloth, wherein a hysteresis characteristic between the curvature and bending moment is obtained by the
10 means defined in claim 4 or claim 5.

10. The method as defined in any one of claims 1, 2, 3, 6, 7 and 8, wherein the deformation unit comprises a plurality of adjacent particles when cloth is modeled as a particle model.

11. A computer-readable medium storing a program which executes a method
15 of simulating the movement of cloth, wherein the method comprising a step of using an immediate buckling model, wherein the deformation unit which represents the part of the cloth of interest is bent immediately without contraction when compressive force is applied to two extremities of said deformation unit.

20 12. A computer-readable medium storing a program which executes a method of simulating the movement of cloth, the method comprising a step of estimating the shape of said deformation unit upon application of compressive force as a function of the distance between two extremities of said deformation unit.

25 13. A computer-readable medium storing a program which executes a method of simulating the movement of cloth, the method comprising a step of

calculating the bending deformation energy stored in said deformation unit by estimating the shape of the deformation unit according to the method defined in claim 12.

14. The medium as defined in claim 12, wherein the estimating step further
5 comprises the steps of: estimating the curvature of said deformation unit as a function of distance between two extremities of said deformation unit; and estimating the shape of the bending deformation from the estimated curvature.

15. The medium as defined in claim 13, wherein the method further comprising
the steps of: differentiating the bending deformation energy to obtain the force
10 vector at the two extremities of the deformation unit; and obtaining the Jacobian matrix of the force vector, wherein the Jacobian matrix is an element for simulating the bending deformation of cloth.

16. The medium as defined in claim 15, wherein terms having negative eigenvalues are dropped from the Jacobian matrix.

15 17. The computer-readable medium storing a program which executes a method of simulating the movement of cloth, wherein a hysteresis characteristic between the curvature and bending moment is obtained by the means defined in claim 4 or claim 5.

18. The medium as defined in any one of claims 11, 12, 13, 14, 15 and 16,
20 wherein said deformation unit comprises a plurality of adjacent particles when the cloth is modeled as a particle model.

19. A method of simulating the movement of cloth, the method comprising the steps of:

estimating the shape of bending deformation occurring on deformation
25 unit which represents the part of the cloth of interest by using an immediate

buckling model wherein the deformation unit is bent immediately without contraction when compressive force is applied to two extremities of said deformation unit;

5 obtaining bending deformation energy accumulated on said deformation unit by estimating the shape of said deformation unit; and

simulating the bending deformation of cloth by using the bending deformation energy.

20. A computer-readable medium storing a program which executes a method of simulating movement of cloth, wherein the method comprises the steps of:

10 estimating the shape of bending deformation occurring on deformation unit which represents the part of the cloth of interest by using an immediate buckling model wherein the deformation unit is bent immediately without contraction when compressive force is applied to two extremities of said deformation unit;

15 obtaining bending deformation energy accumulated on said deformation unit by estimating the shape of said deformation unit; and

simulating the bending deformation of cloth by using the bending deformation energy.